

## PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SPGP101250WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/04521	International filing date (day/month/year) 20.10.2003	Priority date (day/month/year) 29.10.2002
International Patent Classification (IPC) or both national classification and IPC A61C8/00		
Applicant NEOSS LIMITED et Al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 5 sheets.

## 3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  12.05.2004	Date of completion of this report  01.02.2005
Name and mailing address of the International preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Chabus, H  Telephone No. +31 70 340-2684  

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/04521**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-19 as originally filed

**Claims, Numbers**

1-20 received on 06.01.2005 with letter of 06.01.2005

**Drawings, Sheets**

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	12 14 16-19
	No: Claims	1-11, 13, 15, 20
Inventive step (IS)	Yes: Claims	19
	No: Claims	1-18, 20
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: US-B1-6 290 499 (LAZZARA RICHARD J ET AL) 18 September 2001 (2001-09-18)

D2: US-B1-6 283 753 (WILLOUGHBY ANDREW J M) 4 September 2001 (2001-09-04)

2. The subject-matter of **claims 1, 4, 13, 14, 15, 17 and 20** is not clearly defined (Article 6 PCT) as it contains expressions in parentheses. It is indeed not clear if those expressions belong to the scope of protection of the claims or if they are optional. For the following it has been decided to consider them as optional.

3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claims 1, 13, 20** is not new in the sense of Article 33(2) PCT.

- 3.1 The document D2 discloses (the references in parentheses applying to this document) a universal abutment system for mounting on the implant replica. Such a system includes a single-size fastener (screw) which is suitable to engage an implant, a single size element (53) which is suitable to be used as a coping component and which engages with the screw and which is suitable to support an impression material. Said system further includes a plastic tube (61) which can be mounted on the element (53) and can protrude from an impression material (see figure 27A and 27B).

Consequently, the system disclosed in D2 is suitable to be used for pick-up type impression moulding techniques and/or transfer type impression moulding techniques.

Therefore, the subject-matter of **claim 1** is not new.

- 3.2 Document D1 implicitly discloses a method for making an open tray dental impression (see column 4 lines 9-14) which comprises the steps:

- (i) placing a coping component (64) on the implant fastener (60);
- (ii) engaging the fastener and coping component with an implant (20) (see figure

- 7);
- (iii) placing a superstructure (50') on the coping component (60) (see figure 7);
  - (iv) moulding an impression material around the coping component (see column 4 lines 24-28);
  - (v) disengaging the coping component from the implant by unscrewing the screw (64) (see column 4 lines 24-28);
  - (vi) removing the impression moulded material (see column 4 lines 24-28);
  - (vii) (implicitly disclosed) fitting the implant analogue to the coping component and the screw; and
  - (viii) (implicitly disclosed) fabricating a master cast from the impression moulding containing the implant analogue on the coping component and completing the transfer of the implant position from the oral cavity to a model of the oral cavity.

Therefore, the subject-matter of **claim 13** is not new.

- 3.3 For the same reason as mentioned in paragraph 3.1 above, the subject-matter of **claim 20** is not new.
4. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 17** does not involve an inventive step in the sense of Article 33(3) PCT.

Document D2 discloses an arrangement suitable for pick-up type impression moulding (see paragraph 3.1 above) comprising an implant fastener adapted to engage with an implant, a coping component and a superstructure. The subject-matter of **claim 17** differs from the arrangement known from D2 in that it is pre-mounted by the manufacturer. However, this feature is considered as straightforward possibility the person skilled in art would chose to solve the problem posed. Therefore, the subject-matter of **claim 17** does not involve an inventive step (Article 33(3) PCT).

5. Dependent **claims 2-12, 14-16, 18** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D2 or D1 and the corresponding passages cited in the search report.
6. The combination of the features of independent **claim 19** is neither known from, nor rendered obvious by, the available prior art. The reasons are as follows:

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The step consisting of removing the extender prior to model taking if using the transfer type application allows to use the same components in the two types of impression techniques. Therefore, the subject-matter of claim 19 involves an inventive step.

### Claims

1. An impression coping system comprising an implant fastener or attachment means adapted to engage with an implant and a coping component which engages with the implant fastener and is adapted to support an impression material characterised in that system comprises a single-size of implant fastener and a single-size of coping component, both of which are adapted to be used for pick-up type (open tray) impression moulding techniques and transfer type (closed tray) impression moulding techniques.
2. An impression coping system according to claim 1 characterised in that the implant faster is provided at an implant engaging end with a screw thread.
3. An impression coping system according to claim 2 characterised in that the implant faster is a coping screw.
4. An impression coping system according to claim 1 characterised in that the implant fastener is adapted for use in pick-up type (open tray) impression moulding techniques and is provided with a mountable and removable extension means which, in use, is sufficiently dimensioned so as to act as an extension of the implant fastener and protrude through the impression material.
5. An impression coping system according to claim 4 characterised in that the extension means is adapted to form a snug fit on the external surface of the body of the fastener.
6. An impression coping system according to claim 5 characterised in that the extension means comprises a tubular sleeve.
7. An impression coping system according to claim 6 characterised in that the tubular sleeve is profiled.

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8. An impression coping system according to claim 6 characterised in that the tubular sleeve is adapted to be cut to an appropriate length.
9. An impression coping system according to claim 6 characterised in that the tubular sleeve comprises a plastics sleeve.
10. An impression coping system according to claim 4 characterised in that the extension means is adapted to stay in the impression material after impression.
11. An impression coping system according to claim 4 characterised in that the tubular passage is adapted to stay on the implant fastener and thereby is removed from the impression material after impression.
12. An impression coping system according to claim 4 characterised in that the extension member is placed mainly in the contact coping by the manufacturer.
13. A method of making an open tray dental impression which comprises the steps of:
  - (i) placing a coping component on the implant fastener, the fastener optionally being equipped with a spacer;
  - (ii) engaging the fastener and coping component with an implant;
  - (iii) if the extender or superstructure is not already pre-mounted by manufacturer, placing an extender component or superstructure component on the fastener and/or coping component or any other suitable function, and optionally adjusting the height of the extender component or superstructure component;
  - (iv) moulding an impression material around the coping component and the extender;
  - (v) disengaging the coping component from the implant by unscrewing the screw;
  - (vi) removing the impression moulded material (which at this point will carry the coping component, fastener and extender or superstructure);
  - (vii) fitting the implant analogue to the coping component and the screw ; and
  - (viii) fabricating a master cast from the impression moulding containing the implant analogue positioned on the coping component and completing the transfer of the implant position from the oral cavity to a model of the oral cavity.



14. A dental impression coping system according to claim 1 for co-operating with an impression material to take an impression for making a model of a region in a mouth adjacent to an aperture in gingiva which exposes an implant that is installed in bone for pick-up type (open tray) and/or transfer type (closed tray) impression moulding techniques, said system comprising:

a non-rotational fitting for mating with a corresponding fitting of said implant;

an outer surface having a transgingival section configured to fit within said aperture and a supragingival section for embedment in said impression material, said supragingival section having at least one part with a non-circular cross-sectional, said impression coping capable of being transferred back into said impression material after said impression is taken preferably if using a transfer type impression mould technique;

a means intended for fastening or clamping said impression coping to said implant,

an inner surface defining a passage that is generally aligned with said implant for receiving an attachment means intended for fastening said impression coping to said implant:

an attachment means intended for fastening said impression coping to said implant providing the said impression coping

a superstructure or extender being able to be mounted in contact with said attachment means or said impression coping providing a means to access the said attachment means through the said impression material also providing the said impression coping to be used with the said pick-up impression application.

15. The impression coping of claim 1 wherein said implant fastener or attachment means for pick-up type (open tray) and/or transfer type (closed tray) impression coping techniques relies upon on friction, elastics or mechanical interlocking.

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16. The impression coping system of claim 1 wherein the outer surface of the coping component is provided with a plurality of recesses.

17. An arrangement suitable for pick-up type (open tray) impression moulding comprising an implant fastener adapted to engage with an implant, a coping component and an extender or superstructure and wherein the extender or superstructure is pre-mounted by the manufacturer and if needed adjusted by the clinician prior to impression taking.

18. An arrangement according to claim 17 where the extender remains on the implant fastener and/or coping component and not in the impression material and thereby is removed from the impression material after impression.

19. A method for creating a model of a mouth having a dental implant that is installed therein and includes a fitting of an impression coping to an implant according to any aforementioned claims, said method comprising:

installing an impression coping on said implant preferably by screwing by hand holding the superstructure or extender, or screw head or by means a screw driver, said impression coping including at least one first circumferential recess around a longitudinal axis and at least one second longitudinal impression interlocking recess;

removing the superstructure or extender prior to model taking if using the transfer type application

applying impression material into said mouth and around said at least one first and second interlocking recesses of said coping, said second recess having a predetermined angular orientation with respect to said impression material after being applied around said coping;

if using said transfer type application removing said impression material from said mouth and then removing the impression coping from the implant by unscrewing the screw by hand or by screw driver followed by mounting the implant analogue on the

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impression coping after having removed the spacer on the impression coping screw and subsequently reinserting said impression coping into an opening, preferably the same it was earlier removed from, within said impression material:

if using said pick-up application removing said impression coping from the implant by unscrewing the screw through the said access means, superstructure or extender followed by moving said impression material and impression coping arrangement from said mouth and mounting the implant analogue on the impression coping;

the casting of the stone model is then made irregardless of pick-up or transfer type impression technique,

20. A kit suitable for pick-up type (open tray) impression moulding comprising at least an implant fastener, a coping component and a mountable and removable extension means which, in use, is sufficiently dimensioned so as to act as an extension of the implant fastener and protrude through the impression material.